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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,350	03/18/2004	Carlo Misiano	22880	9230

535 7590 07/22/2005

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EXAMINER

BUEKER, RICHARD R

ART UNIT PAPER NUMBER

1763

DATE MAILED: 07/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/804,350	<b>Applicant(s)</b> MISIANO ET AL	
	<b>Examiner</b> Richard Bueker	<b>Art Unit</b> 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 3, the phrase "one of said sources" is unclear and it should be changed to "said radio frequency or pulsed direct current source". Applicants should correct a grammatical error in claim 1, line 23, by changing "deposit" to "depositing".

Claims 1, 3, 5, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groves (2004/0118347) taken in view of Sato (JP 61-104075) and Hock (5,055,169), and taken in further view of Wegman (4,748,935) or Tsujimoto (6,012,413). Groves (Figs. 1 and 6) discloses an apparatus for applying a thin film including a vacuum chamber, one or more crucibles, a substrate mounted on a substrate holder that is connectable to an RF or pulsed DC source that produces a plasma around the substrate and imparts self bias to the substrate holder, means for feeding a reactive gas mixture to the vacuum chamber, a high energy electron gun source for heating a component in the crucible, and a low energy electron source for ionizing the vaporized component in the same manner as applicants' low energy electron source, and it would inherently reduce self bias in the same manner as in applicants' apparatus. Regarding the newly added limitation of the low energy electron beam source being "for . . . reducing said self-bias by at least 80%", it is noted that the recited amount of self-bias reduction (i.e. at least 80%) is a recitation of intended use and the present apparatus claims are not so limited. Groves (see Fig. 1, element 5) also teaches substrate rotation. Groves does not disclose the use of a shutter as

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recited in claim 1. Sato (abstract and Fig. 1), however, teaches that it is desirable to place a shutter between a substrate and electron beam source to provide better control over the coating process. It would have been obvious to provide the apparatus of Groves with a shutter as taught by Sato to improve control of the coating process. Hock is cited for his further explication (col. 5, lines 9-60, for example) of reasons for employing the alternating voltage bias used by Groves and how it functions. Groves (col. 6, lines 20-24) also teaches the desirability of using an insulated feed through for connecting a substrate holder to a biasing power source as recited in claim 3. Regarding the use of a rotatable crucible, Wegman and Tsujimoto both teach that it is desirable to rotate a crucible for electron beam evaporation. It would have been obvious to rotate an evaporation crucible in the apparatus of Groves for the desirable purpose taught by Wegman or Tsujimoto. It is noted that Wegman and Tsujimoto also teach the use of another crucible containing a respective coating component as recited in claim 9.

Applicants have argued that it would not have been obvious to combine the shutter of Sato with the apparatus of Groves because "(t)he shutter referred to in Sato is not, however, provided in conjunction with two electron guns as claim 1 requires". It is noted, however, that claim 1 does not require two electron guns. Claim 1 recites "a high-energy electron beam source" and "a low energy electron source independent of said high energy beam source for ionizing said component". It is noted that the low energy electron source is not required to be an electron beam gun as argued by applicants. It is noted also that Sato's apparatus does include "a low energy electron

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source independent of said high energy beam source for ionizing said component" in combination with a shutter for covering a substrate prior to the start of a coating process.

Applicants have argued that it is not the Groves apparatus in which Hock employs alternating voltage bias. It is noted, however, that Groves teaches the use of a substrate mounted on a substrate holder that is connectable to an RF or pulsed DC source that produces a plasma around the substrate and imparts self-bias to the substrate holder.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

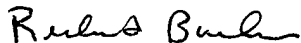
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parvis Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Richard Bueker  
Primary Examiner  
Art Unit 1763